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BEEBLET

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BBC / ACORN

COMPUTER USER GROUP NZ (inc)

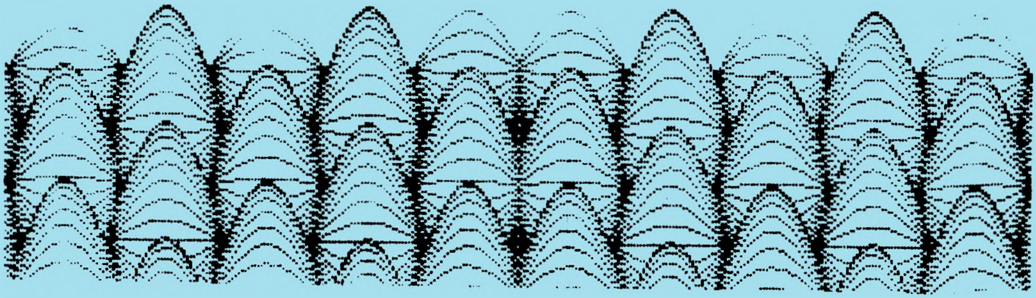
EDITORIAL NOTES

Back to the grindstone. Anne very kindly dispatched two editions of Beeblet to the printer while I was away. Thanks Anne - that was a tremendous effort.

Joe Joyce (Barsons) was in Wellington recently. Apparently the special offer of Masters to User Group members did not have a specific deadline on it originally. It has however been very unpopular with many dealers who a finding their profit margins cut significantly - remember, they have to make a reasonable return to stay in business. So how long the offer ($1550 plus freight) will last is anyone's guess. Some Whitcoulls branches still offer it - otherwise if you are interested in aquiring a Master at the reduced price, perhaps you should contact contact Barsons in Auckland direct. Bear in mind however that if you don't go through a dealer then you forgo the services they can provide - including credit.

HALL OF FAME

Not very big is it? Everything that hasn't changed for quite a while have been deleted. If you have been playing one of the more recent releases, how about sending in a HALL OF FAME entry?



REGIONS

AUCKLAND: ????????

CHRISTCHURCH:
14 July: Paul - The Master
28 July: A talk by a representative of Dysan Discs.
11 August: Fred Frampton - STL components (Solidisc).
22 September: Jay Man - FORTH
6 October: AGM. The Committee is trying to arrange an appearance by Barsons.
28 October: Open Forum
3 November: BBC videotape as seen on TV (final sections).
10 November: Something on sound?

HAWKES BAY: Also busy. Evidently RAID did NOT kill the bug in their newsletter Editor's printer.
July - Wordprocessors were discussed (STARWORD, VIEW, WORDWISE +, EDWORD), followed by workshop groups on BBC, Electron , business, games...
August (12th) - to be held at Colenso High School, Arnold Street, Napier 7-9 pm. Rob Shirley will demonstrate networking systems (on the School's network). Followed by workshops.

WAIKATO: A busy programme is the picture which emerges from a cursory glance through the July "Waibug". The July meeting featured a discussion of Intersheet and Interchart, BASIC and assembly language programming classes, HELP (downloading, loading sideways RAM) and the problem of printing multiple (60-100) copies in VIEW).

Future meetings being planned include a simple question and answer session aimed at beginners (August) and a programming competition. Programming ideas are sought (to the Waikato Acorn User Group, c/o 49 Coronation Road, Morrinsville).

WELLINGTON: Please refer to the May issue or the contacts listed on the back page - NOT to Anne Flpwer. Anne very kindly did the May and June mag issues. She would now like a bit of a break....

BEEBLET CIRCULATION

from the Membership Officer

I have some trouble with our membership database and this resulted in some people not having their copy of Beeblet posted to them. If anyone knows of someone who has not received a recent copy of Beeblet then please contact the National Committee at Box 9592, Wellington or ring Neville Hudson on Wellington 882-444.

Please include your membership number in any correspondence. (The database is keyed to membership number - Ed.)

MASTER HINT

Steve Cosgrove

The compact command on the Master has a problem.

It uses all the memory up to &8000. Fine! But - it will not work if a shadow mode is selected. Oh dear! Solution: - try these key definitions.

```
*Key 0 *fx108,1 M*compact M*map M
*Key 1 *fx108,0 M
```

Enter MODE 1 , then hit f0 a zillion times, and go have a cup of coffee. When you come back, you will see if all free space has been grouped in one place. If it has, hit f1 , otherwise, hit f0 some more. It appears quite safe to hit <ESCAPE> half way through a COMPACT, which is helpfull if all space has been regrouped.

* * *

Q. "I have heard of a method of protecting software ... by writing an EOF at the start of each disk track. When the program is loadig, it ignores this false EOF and continues to the next EOF, but if copying is attempted, the first EOF is read and the rest of the trrack is ignored."

A. I'm afraid that the method of protection I think you mean is old hat to the copying rings (I have never belonged to one!). What is done is that instead of SAVEing a BASIC program, it is *SAVEd, and the chunk of memory beyond the end of the program is included in the file by specifying an end address beyond TOP. If you SAVE it, you lose the extra information afer TOP, but by doing an *OPT 1,2 before loading, you get the addresses needed and can *SAVE the whole file. The latest protection method seems to be based on elapsed time instead, using the 6522, and may prove to be impossible to break.

* * *

Confidential to Members.   8 June 1986

DISCOUNT STOCKS

We are currently holding stocks as follows:-

Disks (box of 10)   3M DSDD 5.25" $45.00 + $1.00 pp
 "   3.5" $85.00
Tapes(packet of 20) Tracer C10$30.00 + $2.00 pp
Tape(New Member)   EMI C30 $5.00
Paper fan-fold   M & P 1110/1 $5.00 + $1.00 pp per 200 sheets
Beeblets Vol 1   5,6,10,11 $0.50 each
 "   Vol 2   all except May $1.00 each
 "   Vol 3   all $1.50 each
 "   Coping out of stock issues $3.00 each

Special

Two complete sets of volumes one and two Beeblets have just been located. These are available at $15.00 per volume.

Beeblet Covers   Pre-V-Dex(2 Vols) $4.50
Printer ribbons   Logitec loops $10.00
 "   Ink   100 ml bottle $10.00

Wellington members these are available at both monthly meetings and workshops.
For other members postage will be arranged on receipt of your cheque.

CORRECTIONS

to REPVAR (submitted by GCF last month).

In the previous issue the broken line character "¦" (ASCII 124) was ommitted from the listing of the Wordwise program, in several places (pages 27 and 28):

- in the ".remove_trailing_pad_chr" routine

```
A$= "¦" + CHR$(13)
```

- and in the ".report" routine several lines have the "¦" character missing, eg. "¦G" and "¦T" come out as " G" and " T".

↓↓↓

```
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::
:::##::::::##:::##########:::##:::::::::########::::##:::
:::##::::::##:::##:::::::::::##:::::::::##:::::##:::##:::
:::##::::::##:::##:::::::::::##:::::::::###::::##:::##:::
:::##########:::#######::::::##:::::::::########::::##:::
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:::##::::::##:::##########:::##########:##::::::::::##:::
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::                                ::::::::::::
:::::::::::: A forum conducted by Steven Rose  ::::::::::
::::::::::::::                                :::::::::::
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::
```

A request from a rather harried "Technical Support Officer" (me!):

Many problems that I receive have been answered in magazines. When you write with a problem could you please include a list of the magazines that you regularly have access to, so that I know whether I can refer you to an issue, or should copy the article.

Three sets of problems/questions have found their way to me this month, the first from Neville in Christchurch:

Q1. Could we tell him how to order a Master 128 though the user group?

A. User Group members have been offered a discounted price for the Master 128 and/or internal co-processors by the New Zealand distributor, Barson Computers Ltd, and this may be claimed by producing your membership card at any Whitcoulls branch or at Barsons. The offer shows no signs of expiring as yet.
NB. EDITOR'S NOTE: I have heard that the offer was to expire by 30 June. Don't let that stop you from asking for it though...

Please note that we rely on magazines and Barsons for our information, and we publish the information from Barsons, so you probably know about as much as we do.

→→→

Q2. Can the Master take the Acorn speech chip? If so, do I simply transplant the speech and PHROM chips, or does the circuit board have to be altered?

A. The Master has no speech facilities, although it may be possible to modify the circuit board to provide them, or somebody may find a method of connecting a speech chip through one of the cartridge sockets. The only other ways to make it talk are to buy an external add-on box, or to use "Speech!" from Superior Software, which uses the sound chip and speaker. This program produces reasonable speech, but uses around 7.5K of RAM.

Q3. In what areas is the Master faster than the BBC? Do games need to have delay loops added to make them playable?

A. The Master 65C02 runs at the same speed as the BBC 6502, so all of your BBC commercial games should run at the same speed, if they run at all. The reason that BASIC IV is faster is that it takes advantage of the extra machine code instructions provided by the 65C02 to shorten a lot of the machine code, so the same operation is coded using less instructions and therefore runs faster.
Many games will not work on the Master for various reasons, although almost all Acorn ones do. This is partly due to the fact that the Master memory map has been rearranged, so that programs not written to the Acorn rules will probably not work properly. BASIC programs will still work, but possibly not if they access memory locations directly that are used for different purposes in the Master.

Q4. Do adventure games such as Snowball and Lords of Time run on a Master?

A. I have no idea whether adventure games run on a Master, although text-only ones have a better chance than most due to not using graphics. However the protection system used could still cause it to crash.

Q5. Would my Advanced User Guide still be useful?

A. Neil Gordon, who has a Master, finds that the Advanced User Guide is still useful. The operating system calls are the same, and the circuitry uses the same chips. I wouldn't guarantee books such as the BASIC ROM User Guide however.

Andrew in Hamilton has a problem with his Solidisk 64K sideways RAM board:

Q6. All my ROMs work in sideways RAM with no problems, but the RAMDISK program supplied with the board (Solidisk supply free software - Steven) gives me an error whenever I try to load a program from the silcon disk. The error has the same number as "Disc fault NN at TT/SS".

A. You are not the only one who gets "disk fault" errors with RAM disks. Anton in Upper Hutt also has had this problem, with no solutions yet. He has had a 32K board, upgraded to 128K, and again to 256K, and his RAMDISK program worked once, sort of.

I have a 64K Solidisk board too, and have only used the RAMDISK briefly to see if it worked. I successfully copied my !BOOT file to it, *TYPEd it, changed startup options, booted from the ramdisk, and SAVEd and LOADed a BASIC program to/from it, so mine seems to work. I wonder whether you need to format yours first? I didnt have to, but Solidisk keep changing things (perhaps trying to make them work properly).

It is possible that the RAMDISK is not compatible with some versions of the DFS. Perhaps you should try to find somebody with a different version of the DFS ROM, borrow it, and replace yours with theirs. If the RAMDISK still doesn't work, it's not the DFS.

It is unlikely but possible that you have a corrupted track on the disk. Try verifying the disk.

Has anybody met and solved this problem?

My answer is that, typical of Solidisk software, the RAMDISK program doesn't work very well. It may even be as bad as the menu program I received, which couldn't delete a ROM image from a RAM bank, but could do all sorts of useless things like *TYPEing a file.

Jean, our treasurer, has a printer problem:

Q7. On trying to print part of a spreadsheet, the printer hangs at line 100, and also produces uneven indentations of most

↓↓↓

lines (on the printout, the occasional line sticks out to the left, and the other lines aren't lined up properly - Steven).
The spreadsheet takes the maximum number of characters per line, but has worked okay for similar but shorter printouts from the same type of spreadsheet, using the same spreadsheet program. The printout looks okay in condensed mode.
Her printer hasn't got a buffer.

A. I'm afraid that I have found no answers to this one - has anybody else any ideas?

Well, that's it for this month, keep them coming!

↓↓

FOR SALE
$$$$$$$$$$$$$$$$$$$

EPSON Disc Drive, 200K, 40 track, DS, less than 6 months old.

$250 o.n.o.

Phone Andrew, Hamilton (071) 434-008

****

BBC B, Basic 2, 1.2 O.S., Speech. $900

Phone Neville Chch 228-622 or write P.O. Box 9028, Christchurch.

****

Setting up Beeblet requires a stack of embedded (OC) codes in Wordwise+. Every so often I get strange problems - these seem arise when I have got more than about 20 commands in one line. Other commands (particularly paging) get corrupted.

↑↑

EASY SWITCHING

S. Ash

Does he have to subscribe to all these groups and magazines??

The autumn Technical Aids Trust newsletter, TAT Chat arrived, with an advert for "bump" switches. There is still some equipment in the house that Beastie can't manipulate finely enough, or hasn't been programmed in sufficient detail. HE thinks that replacing some of the more delicate switch mechanisms with these bump switches will make the job easier for it, and he raves about the 10+ price of $35 each, compared with the $40 each singly. He also thought the baby would soon learn to operate one from its bassinet to change the scenery on a spare screen above it, or "call" for another feed or nappy change. He refuses to watch the entertainment baby gets just lying under a tree, trying to grab the shadows of the leaves in the breeze! By the way, I managed to sneak a look at his Bankcard bills - that Beastie isn't just one - it's several packages. Wonder where he gets them all mailed to.

Mind you, I haven't seen much of him lately (never did: I mean even less than usual). The computer has really been his mistress, and I think the beastie's seduction of it has left him a little upset and jealous. He complains it has taken over the house, it's not his anymore, its even usurping his role of Master of the House. It was fate then that led him to eye gloomily the details of a User Group price on a new computer called the "Master". 'Suppose we need this one now' he eeyored. Apparently he's martyring himself working some overtime to pay for one. Plus screen, plus Winchester drive (what's wrong with Kaupati Drive I want to know), plus Turbo plus Scientific for the Kids, plus a few other bits and pieces.

Apparently the Master does something called "multi-tasking" which I gather means it can emulate a mother/housewife. I'll believe that when I see it.

ADDING COLOUR TO WORDWISE

If you use a colour TV or monitor try typing in *FX155,36 in Wordwise immediately following an embedded command (green) and preceding text or a Return. You get a blue preview screen... Anyone found other useful / interesting effects?

A CLOSE ESCAPE

Tony W. Napier

Girls and computers don't mix,
We all know that to be true.
But when Sue, Jean or Pat, comes round for a chat,
Now what's a poor hacker to do?

Attractive she certainly is,
But resist the temptation to seize her.
Just think what your life would be like, with your Beeb,
Exchanged for a fridge or a freezer.

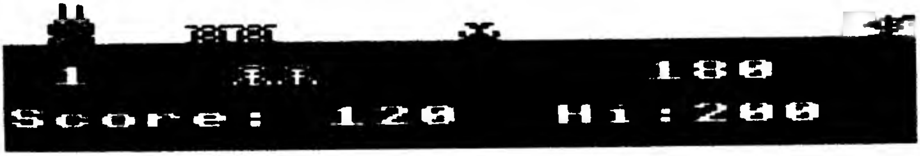
Now girls are alright on Saturday night,
When your program's not going too well.
When your brain is befuddled, it's nice to be cuddled,
While dreaming of Masters (Professional)

Then refreshed, it's back to the keyboard,
(Non-bounce, ergonomic and QWERTY).
Though the looks that you get from your girlfriend,
Are becoming increasingly dirty.

But girls are insiduous creatures,
And a cuddle may lead to a kiss.
She'll REPEAT PROCcuddle UNTIL,
A "Mrs" replaces the "Miss".

So quick before it's too late,
There's only one thing to do.
ESCAPE: LOAD: and RUN: you can get all your fun,
With your eyes on the Beebs' VDU.

(ED.'S note: My wife, Susan, is a computer programmer....)



:NEW

Break doesn't erase the text in Wordwise plus as it did in Wordwise. Try :NEW from the menu.

25 REASONS WHY A COMPUTER MAKES AN IDEAL PARTNER

1) A computer is always ready when you are.
2) A computer obeys your every command.
3) A computer never gets a headache.
4) A computer will respect you in the morning.
5) A computer doesn't cause problems, it solves them.
6) A computer accepts you just the way you are.
7) A computer listens to reason.
8) A computer doesn't snore.
9) A computer won't take you for granted.
10) A computer never compares you to its past lovers.
11) A computer doesn't take forever in the bathroom.
12) A computer doesn't have a father who owns a shotgun.
13) A computer won't take up all of your wardrobe space.
14) A computer is a lot smarter than anyone else you've ever dated.
15) A computer won't leave hard-to-remove stains on your sheets.
16) A computer won't embarrass you in front of your parents or friends.
17) A computer doesn't make you feel guilty about anything.
18) A computer won't grab all the blankets in the middle of the night.
19) A computer will never ask you to spend the holidays with its family.
20) A computer won't use up all of the hot water in the shower.
21) A computer won't get upset if you just roll over and go to sleep.
22) A computer won't leave you if it finds out you've been unfaithful.
23) A computer won't make you sign a pre-nuptial agreement.
24) A computer can't testify against you in court.
25) A computer can't give you herpes.

LOTS OF TURTLES

G.C.F.

INTRODUCTION

This was motivated by son John (then 6 years) wanting "lots of turtles" to move around at once. The manual 'Introduction to LOGO' had a relevant chapter, but was "a trifle too advanced" for him to experiment with. So I had to work out how to create a Logo procedure to do this easily...

... several days later I had one working and fully 'debugged'. If anyone wishes to rewrite it and simplify it or improve its style, please send me a copy, along with an explanation of the 'differences'.

WHAT JOHN EXPECTS

a) Generate 1 to 32 turtles, according to John's wishes at the time.

b) Arrange them evenly at HOME, pointing out like spokes of a wheel.

c) Set them up so they all obey the same command at the same time.

WHAT ALSO HAD TO BE DONE:

d) If the extension software for multi-turtles has not been loaded, then load it in. (No point loading it automatically - extra copies just take up more of the Logo workspace)

e) If there were too many turtles already in existence, kill off the excess.

f) If not enough turtles, hatch enough to make up the numbers.

```
TO LOTS :N
IF :N < 1 [PRINT [Must be least one?] STOP]
IF :N > 32 [PRINT [Too many - must be no more than
32!] STOP]
IF NOT DEFINEDQ "HATCH [LOAD "L.MULT]
LOCAL "T -1
CS
REPEAT :N [MAKE "T :T + 1 IF NOT ALIVEQ :T [HATCH
:T]]
MAKE "T 0
REPEAT (:N - 1) [MAKE "T :T + 1 TELL :T ST RT (:T
* 360 / :N)]
REPEAT (32 - :N) [MAKE "T (:T + 1) IF ALIVEQ :T
[FORGET :T]]
TELL TURTLES
END
```

GETTING OUT OF MODE 7

Hataitai Workshop

An Electron user comes across a magazine listing using Mode 7 effects. How to get the equivalent appearance on his screen? Let's assume that memory is not a problem.

First a list of Mode 7 ASCII values and their effects:

129 alpha red
130 alpha green
131 alpha yellow
132 alpha blue
133 alpha magenta
134 alpha cyan
135 alpha white
136 flash
137 no flash
138 nothing
139 nothing
140 normal height
141 double height

145 graphic red
146 graphic green
147 graphic yellow
148 graphic blue
149 graphic magenta
150 graphic cyan
151 graphic white
152 conceal display
153 contiguous graphics
154 separated graphics
155 nothing
156 black background
157 new background
158 hold graphics
159 release graphics

This article will deal with the left-hand column only; the graphics will be dealt with in another article.

A program may have a section looking like this:

```
   10 REM Mode 7 demo
   20
   30 MODE7
   40 PRINTSPC7CHR$141;CHR$131;"VENUSIANS";CHR$135
;"ARE COMING"
   50 PRINTSPC7CHR$141;CHR$131;"VENUSIANS";CHR$135
;"ARE COMING"
   60 PRINT''"At 10.30am GMT, data was received fro
m"
   70 PRINTCHR$129;"GIOTTO";CHR$135;"indicating ob
jects were"
   80 PRINT"rising from the surface of the planet"
   90 PRINTCHR$131;"VENUS."
  100 PRINT''"Although there is insufficient data,"
  105 PRINT"scientists are already speculating tha
t"
  110 PRINT"these objects are controlled by some"
  120 PRINT"force other than";CHR$136;CHR$133;"ant
```

```
i-gravity."
 1000 END
```

On a line by line basis now:

```
   40 PRINTSPC7CHR$141;CHR$131;"VENUSIANS";CHR$135;"ARE COM
ING"
```

Print 7 spaces, then a character to indicate double height, then a character to use yellow text characters, then the word "Venusians" then a character to indicate a return to white colour, then the words "are coming".
If we ignore the double height for now, the equivalent in Mode 1 would look like this:

```
   40 COLOUR2:PRINTSPC8"VENUSIANS ";:COLOUR3:PRINT"ARE COMI
NG"
```

I've taken Mode 1 because it too is a 40-character mode, with the most colours readily available (4, compared with teletext 7 with variations)

This swapping of colours is fairly straightforward, providing you can get enough colours in Mode 1 to at least allow the differences to show:

```
   70 PRINTCHR$129;"GIOTTO";CHR$135;"indicating objects wer
e"
```

translates directly in to:

```
   70 COLOUR1:PRINT"GIOTTO";:COLOUR3:PRINT" indicating obje
cts were"
```

However, you should note that when there is a character "printed" in Mode 7 that really represents a colour change, it appears on the screen as a space. Line 70 has no space between the words 'Giotto' and 'indicating', but a character to change colour has been inserted. When the line is converted to Mode 1, the space has to be inserted so the two words do not run together.

So that's the straightforward colour changing. What about flashing colours? CHR$136 makes letters flash on and off, not like the flashing colours available for other modes (eg flash blue/yellow), so you will have to decide just how you wish to treat this feature.

Back to double height. To get it in Mode 7, the text has to be printed twice. When preceded by CHR$141, the first line produces the top half of the characters, the second time it produces the bottom half of the text.

Here is a PROCdouble to get around that, plus how to use it.

First you will need to add at the beginning of the program, the following line:

```
    20 DIM W% 8
```

This grabs some space for the computer to work in as it translates a character into one twice its size.

If you add the two PROCs here as well, you can get double-height characters in any mode as simply as PRINT"Gidday ";:PROCdouble("WAL")

```
  1010 DEF PROCdouble(A$)
  1020 LOCALX%,L%,I%,Y%
  1030 L%=LEN(A$)
  1040 X%=POS:Y%=VPOS
  1050 FOR I%=1TO L%
  1060    PROCdbl(ASC(MID$(A$,I%,1)),X%+I%-1,Y%)
  1070    NEXT I%
  1080 ENDPROC
  1090
  1100 DEF PROCdbl(asc%,col%,row%)
  1110 LOCAL A%,X%,Y%
  1120 W%?0 = asc%
  1130 X% = W%MOD 256
  1140 Y% = W%DIV 256
  1150 A%=&0A
  1160 CALL &FFF1
  1170 VDU23,254,W%?1,W%?1,W%?2,W%?2,W%?3,W%?3,W%?4
 ,W%?4
  1180 VDU23,255,W%?5,W%?5,W%?6,W%?6,W%?7,W%?7,W%?8
 ,W%?8
  1190 VDU31,col%,row%,254,8,10,255
  1200 ENDPROC
```

Adding colour gets a little more involved - from

```
    40 PRINTSPC7CHR$141;CHR$131;"VENUSIANS";CHR$135
 ;"ARE COMING"
```

to

```
      COLOUR2:PRINTSPC7;:PROCdouble("VENUSIANS"):C
 OLOUR3:VDU11:PROCdouble" ARE COMING"
```

Notice that PROCdouble doesn't automatically put you on a new line when it has finished. In fact it leaves you at the bottom of your double-height character. So if you want text evenly mixed on the same line, you need to move the cursor back up a line to continue on what appears to be the same line. This is achieved by the VDU11 in the line above, or by "PRINTCHR$11;" in the example below:

```
      COLOUR2:PRINTSPC7;:PROCdouble("VENUSIANS"):C
 OLOUR3:PRINTCHR$11;:PROCdouble" ARE COMING"
```

* * *

So the translation of the lines 30 to 120 at the beginning of the article to another mode will end up rather like this:

```
    10 REM ex-Mode 7 demo
    20 DIM W% 8
    30 MODE1
    40 COLOUR2:PRINTSPC7;:PROCdouble("VENUSIANS"):C
 OLOUR3:VDU11:PROCdouble(" ARE COMING")
    50 PRINT
    60 PRINT"At 10.30am GMT, data was received from
 "
    70 COLOUR1:PRINT"GIOTTO";:COLOUR3:PRINT" indica
 ting objects were"
    80 PRINT"rising from the surface of the planet"
    90 COLOUR2:PRINT"VENUS.":COLOUR3
   100 PRINT'"Although there is insufficient data,"
   110 PRINT"scientists are already speculating tha
 t"
   120 PRINT"these objects are controlled by some"
   130 PRINT"force other than";:COLOUR1:PRINT" anti
 -gravity.":COLOUR3
  1000 END
```

P.S. don't forget to add in lines 1010 onwards, with the DEF PROCs.

* * *

```
  10 REM  WORM
  20 ON ERROR VDU4,20 :STOP
  30 MODE1
  40 MOVE 640,512
  50 VDU 5
  60 REPEAT
  70   C%=RND(3)
  80   GCOL 0,C%
  90   VDU19,C%,RND(15);0;
 100   A = 2*PI*RND(1)
 110   PLOT 1,8*COS(A),8*SIN(A)
 120   UNTIL FALSE
 130 END
```

* * *

↓↓

When Bigger equals more Frustration

Steve Cosgrove

For many the new Master Series computers are one great mystery. Even for those of us who have the use of one, the mystery is still maintained by Acorn. Immaginative writers can have a field day, I would really prefer to have a proper manual. The machine comes with a user guide - "Welcome Guide" it is called in this case - but that only has half of a very large number of stories. Even to get as much information as a BBC or Electron "User Guide" one has to spend another $60-odd to get the "Reference Manual Part Two". As even the moderately logical type would be able to deduce, even this is not the final answer. "Part One" is not available yet, and will presumalbly be another $60+ when it arrives. So, those moving to a Master should try to keep their old manuals, and try to borrow an Electron Advanced User Guide, which is the only source I know of technical info on Acorn ADFS. As well as these, I have found the Solidisk ADFS manual to be helpfull. The story will not be complete then though - as to fully utilise VIEW and ViewSheet, the VIEW and ViewSheet "Guides" are needed to fill in Welcome Guide gaps.

My suspicions are that many other things will be left out of the Reference Manual altogether, and there will be further scope for an "Advanced Master User Guide". Acorn products have always been expensive, but generally included decent documentation. This time the price is still too high - we can buy IBM "compatables" for less - and the documentation has reached an all-time low. (See further comments I made in Beeblet, Oct '85 EAUG review.) I do have some positive comments regarding the Master though, so keep watching the magazine if you want to know more.

BBC 微型计算机用者

Did you know that the Wordwise text indenting command (TI) can accept negative values? Yes, the block so marked sticks out to the left.

↑↑

EXTRA RESIDENT INTEGER VARIABLES?

G.C.F.

There are only 26 of these: from A% to Z%

However according to the February 'Acorn User' p.52, there are 52, got by including the lower case letters a% to z%.

It is "obvious" how this misconception came about, despite the facts being clearly stated in the BBC User Guide on p.66

The SIMPLEST "do nothing" loop:
takes the same time to execute, regardless of the integer variable name used:

```
  10 H%=1E5
  20 TIME=0
  30 FOR I%=1TOH%:NEXT
  40 PRINT INT(TIME*1E4/H%)
```

This takes 176 microseconds per loop. Substitute the resident integer variable I% by another integer variable like this:

```
  30FORqqqqqqqqqqqqqqqqqqqqqqq%=1TOH%:NEXT
```

and run - it takes 176 microseconds to execute again!!
(Changing the loop variable to a real -ie leave off the % - does make a BIG difference!)

Any other reference to the loop index other than in the FOR statement itself, shows a significant difference in times:

```
  30 FORI%=1TOH%:A%=I%:NEXT
                 (596 microseconds per loop)
  30 FORi%=1TOH%:a%=i%:NEXT
                 (803 microseconds per loop)
```

P.S. 1E5 is Basic's idea of shorthand for 100,000 Likewise 1E4 is 10,000. The number of zeroes corresponds to the number after the "E"

HALL OF FAME:

Chuckie Egg	345,210	Matthew Davidson
Felix in the Factory	18,000	Felix
Arcadians	42,320	Felix
'747'	745	Felix

On Creatively Using Shadows....

Steve Cosgrove

The June article on the Solidisk "256K board" made mention of shadow RAM. This facility is provided in the Master Series computers as "standard", and bears further mention.

I will concentrate on the operation of the Acorn implementation, however, I should imagine that STL have provided similar facilities in their memory expansion. In fact, Mike's article mentions some features appear to make this product much more flexible in use than the Master, however, I suspect that as more information becomes available on how to use the Master RAM, much more will be posible than we know about so far.

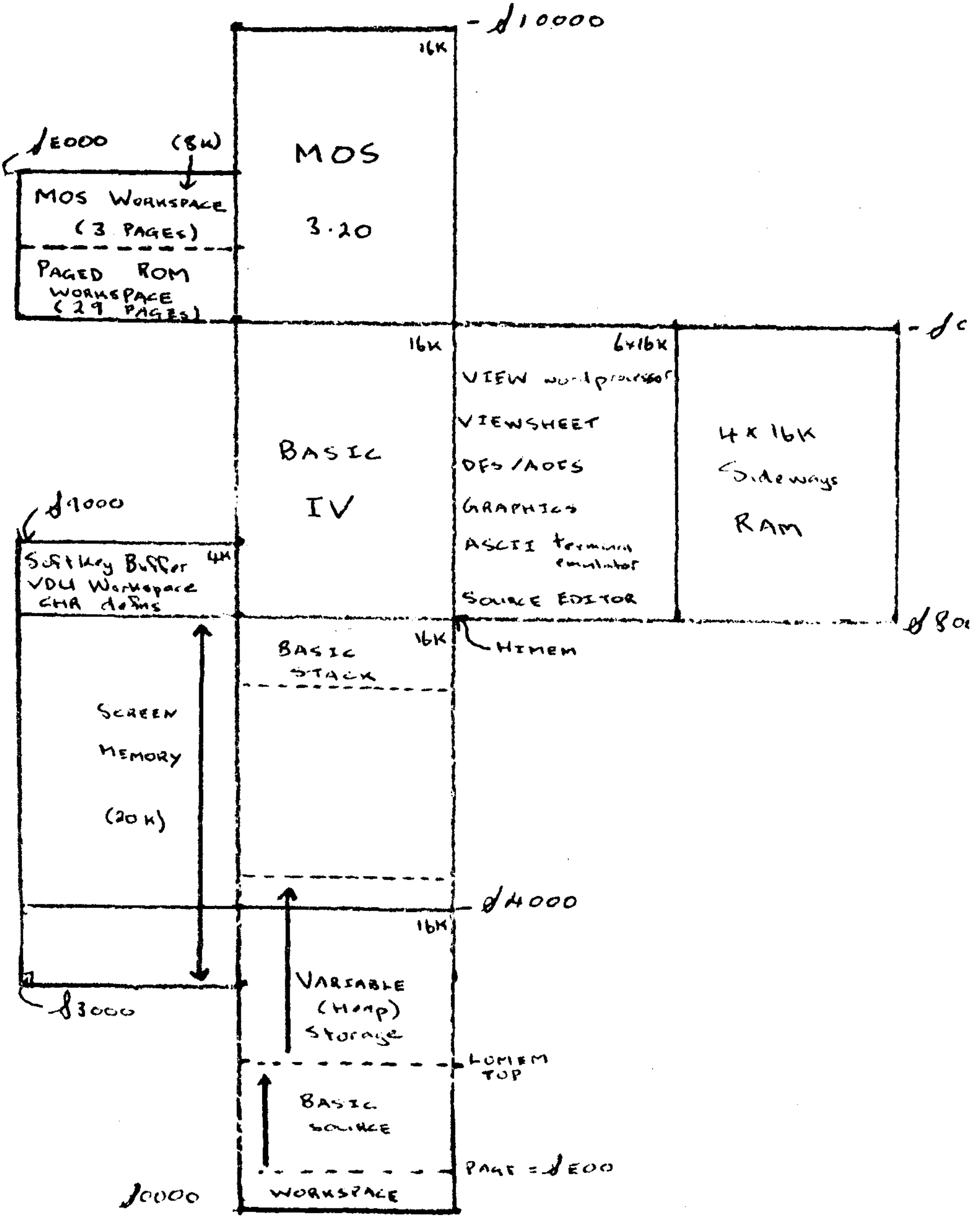
Another memory map accomapanies this article. It is copied from the Master Series Welcome Guide.* The section which interests me is the 32K to the right of the main "block".

Shadow memory is another name for any "sideways" or "paged" RAM. Confused? - then ignore this paragraph, and continue with the next. One of the buzz-words in computer marketing these days is "extra" RAM, or functions which "don't encroach on user RAM". What this means is that you have paid for some RAM which the operating system will not usually let you use. Nothing is free. All of the Master RAM is available for user programs, but the operating system makes it very difficult to use 12K of it, perfering to have enlarged print buffers, user-defined character space, ten disk file buffers, and other functions which most of us will not use very often, if ever. How to get into this space will be covered by magazines in time I suppose. At the moment I will talk about the "shadow memory".

Next month I will talk about a great way of destroying a program without really trying (it involves not being carefull with *fx108,1). The other OSBYTE (*fx) commands which deal with shadow memory will be covered in the following month. Anyone who who has used, or would like to use, shadow RAM on a Master or other computer is welcome to write to me, C/- the User Group, and I will send a copy of the entire series of articles, either for information, or criticism.

* No it isn't. Ed.

BBC MASTER 128 MEMORY MAP



Whats on?

Steve Cosgrove

Until ADFS came around, I never could take BBC disks seriously. With only 31 files per side, it was possible to remember most of the files on most of my disks.

The advent of a civilised filing system now means often hundreds of files on one disk, distributed between different directories. This program will run under either filing system.

While not foolproof, this program makes creating labels for disks (or anything else) easier. It also has a some modules which have other potential.

To print a disk label for the first time, decide what you will call the file which is to contain the data for the label. There is no need for this program to be on each disk which has a label, just the name file. The default file name is "$.Disk_label". This name is not valid under DFS.

RUN the program, and it will ask whether you wish to change the directory, then the filename. The program then looks for a file of the name specified. If not found, it gives the user the option of ENDing the program then, or creating a 'dummy' label:

```
"No Label
 has been entered
 for this directory
 yet.        "
```

If a label exists, then the program displays it, and asks the user whether she wishes to change its wording. If the response is 'y', then prompts are given for each line of the label.

The next prompt is for a printout. If a printout is not wanted, then the program ENDs. Otherwise the next prompts are asking whether " - backup " should be added to the disk title, and whether the label is for a 3.5 inch disk. The latter sets a maximum width of the label.

Key variables:

TIME$: is a function which returns the day, date, and time, (as shown in the header comments). It only exits on the Master, so perhaps the program should prompt for this information.

File_path$: the directory is which label information will be stored.

File_name$: the actual file name.

tab : used to line up each line of the current label, and new label data entered. This makes it easy to use cursor editing to copy a line or two of the current name to a new name.

x_width : the width of the disk (or label - whichever is greater), and the number of characters which will fit on the label for each of the print styles used.

Key modules (that's fancy for "PROCedures and FunctioNs")

PROCerror : called if any error occurs. Particularly important for error # 222 ("channel") which then optionally creates a new data file.

PROCdir & PROCname : optional, to change from default filename.

PROCcurrent : displays current label details.

PROCsetup : gets new lines. The name on the last line can be changed without greatly degrading the program.

PROClabel : prints the label if called.

PROCprint_init : this will need to be customised for each printer. The setting shown are for my Super 5, which is a 'rebadged' Logitec, which is Epsom compatable. Follow all that?

FNprinter_only : returns a string consisting of each parameter preceded by a CHR$(1). This results in the string being printed without being displayed on the screen.

PROCprint : checks that each line will fit on the label, in the required typeface, and tries to make the print smaller if it will not. No check is made of whether the line will fit when printed in condenced print.

FNyn : Displays a prompt supplied in the parameter. Returns TRUE if 'y' or 'Y' is pressed, otherwise returns FALSE. If no key is pressed within 100 seconds, FALSE is also returned.

```
 10 REM Info file generater
 20 REM Create an info file
 30 REM and generate a label
 40 REM for the current disk.
 50 REM by Steve Cosgrove
 60 REM Thu,22 May 1986.17:12:53
 70
 80 File_path$ = "$"
 90 File_name$ = ".Disk_label"
100 ON ERROR PROCerror
110
120 MODE 0
130
140 IF NOT FNyn("Label directory is '+File_path$+"' is that OK?") THEN PROCdir
150 IF NOT FNyn("Label file name is '+File_name$+"' is that OK?") THEN PROCname
160 tab = 20
170 PROCcurrent
180 IF FNyn("Change these lines?") THEN PROCsetup
190 IF FNyn("Printout required ?") THEN PROClabel
200 CLOSE# channel
210 END
220
230 DEF PROCerror
240 ON ERROR OFF
250 CLOSE#0
260 VDU 3
270 IF ERR = 222 THEN IF FNyn("No label exists in that directory - continue?") THEN PROCcreate_label : ENDPROC : ***** NB NB - this is the only 'real' exit! *
280 REPORT
290 IF ERR <> 17 THEN PRINT " at line ";ERL
300 PRINT
310 END
320 ENDPROC
330
340 DEF PROCcreate_label
350 channel = OPENOUT (File_path$+File_name$)
360 PRINT # channel,"No Label","has been entered","for this directory","yet.",TIME$
370 CLOSE # channel
380 ENDPROC
390
400 DEF PROCdir
410 OSCLI ("*. " + File_path$)
420 INPUT "Insert disk, then enter directory name =) $" File_path$
430 File_path$ = "$" + File_path$
440 ENDPROC
450
460 DEF PROCname
470 INPUT "enter file name ." File_name$
480 File_name$ = "." + File_name$
490 ENDPROC
500
510 DEF PROCcurrent
520
530 channel = OPENUP (File_path$ + File_name$)
540 PRINT "The label for this disk currently is:-"
550 FOR I% = 1 TO 4
560   INPUT #channel,line$
570   PRINT TAB(tab); line$
580   NEXT
590 ENDPROC
600
610 DEF PROCsetup
620
630 PTR #channel = 0
640 PROCinput("disk title ")
650 FOR I% = 1 TO 3
660   PROCinput("description line "+STR$(I%))
670   NEXT
680 PRINT #channel, TIME$ + " " + "Steve Cosgrove"
690
700 ENDPROC
710
720 DEF PROCinput(Line$)
730
740 PRINT "Enter the " Line$ "."; TAB(tab);
750 INPUT LINE "" Line$
```

```
760 PRINT #channel, Line$
770
780 ENDPROC
790
800 DEF PROClabel
810
820 PTR #channel = 0
830
840 INPUT #channel, Title$
850 IF FNyn("Is label for a backup disk?") THEN Title$ = Title$ + " - backup"
860 IF FNyn("Get printer ready before  continuing!"+CHR$(13)+CHR$(10)+"Is label for a 3.5 inch disk?") THEN disk_width = 2.8 ELSE disk_width = 4 : REM disk_width is in INCHES, as that is used for printer  control modes
870
880 PROCprint_init
890
900 FOR I% = 1 TO 3
910   INPUT #channel, Description$(I%)
920   NEXT
930
940 INPUT #channel, Date$
950
960 PROCprint(Title$,e_width,enlarged$)
970 FOR I% = 1 TO 3
980   PROCprint(Description$(I%),n_width,normal$)
990   NEXT
1000 PROCprint(Date$,n_width,normal$)
1010
1020 ENDPROC
1030
1040 DEF PROCprint_init
1050
1060 condenced$ = FNprinter_only(&1B,ASC"@",&1B,ASC"G",&F)
1070 enlarged$ = FNprinter_only(&1B,ASC"@",&1B,ASC"o",&E)
1080 normal$ = FNprinter_only(&1B,ASC"@",&1B,ASC"E",&1B) + FNprinter_only(ASC"M",0,0,0,0)
1090 printon$ = CHR$(2)
1100 printoff$ = CHR$(3)
1110 tab = 20
1120
1130 e_width =  6 * disk_width : REM  Enlarged = 6 Characters per inch
1140 n_width = 12 * disk_width : REM    Normal = 12 Characters per inch
1150 c_width = 17 * disk_width : REM Compressed = 17 Characters per inch
1160
1170 DIM Description$(3) : REM three lines of discription
1180
1190 ENDPROC
1200
1210 DEF FNprinter_only(p1,p2,p3,p4,p5)
1220 =CHR$(1)+CHR$(p1)+CHR$(1)+CHR$(p2)+CHR$(1)+CHR$(p3)+CHR$(1)+CHR$(p4)+CHR$(1)+CHR$(p5)
1230
1240 DEF FNyn(line$)
1250 PRINT line$;" ";
1260 result$ = INKEY$(10000)
1270 PRINT result$
1280 = (result$ = "Y") OR (result$ = "y")
1290
1300 DEF PROCprint(Line$,width,type$)
1310
1320 PRINT normal$;printon$;
1330
1340 IF LEN(Line$) > n_width THEN PRINT condenced$; : ELSE IF LEN(Line$) <= width THEN PRINT type$;
1350
1360 PRINT Line$'printoff$;
1370
1380 ENDPROC
```

DOUBLE HEIGHT & DOUBLE WIDTH

David Fung

Some useful routines to print double height and double width text or double height or double width were published in ACORN USER November 1985. As printed they were some what clumsy to use. I have pulled them about a bit, although not too much, to modify them to my needs. There is still a lot of room for improvement but the programme is now much more versatile - even for a child to play with.

The modified programmes will produce the enlarged characters in all modes except mode 7 and they can be typed in directly from the keyboard. Selection of MODE is interactive. The cursors can be used as normally, but not the DELETE or COPY keys. Mistakes can be over-typed or erased with SPACE. Words will wrap round the end of line, RETURN will however terminate the programme so the cursor keys will have to be used instead.

Listing 1 "DHDW" is for Double Height and Double Width.
For DOUBLE WIDTH only modify the programme as follow:

```
  710 IF A$=CHR$(138) VDU10:GOTO740
  720 IF A$=CHR$(139) VDU11:GOTO740
  730 PROCdouble(A$)
  820 C$=CHR$(240)+CHR$(241)
  870 VDU 23,240,D?1,D?3,D?5,D?7,D?9,D?11,D?13,D?15
  880 VDU 23,241,D?2,D?4,D?6,D?8,D?10,D?12,D?14,D?168
```

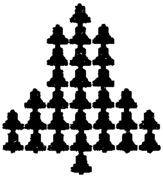
Then DELETE 830,890,900,920,930

Listing 2 "DH" is for Double Height which is fairly straight forward.

```
  5 REM Listing 1
 10 MODE 6
 20 PRINT'''''"A Programme to print d
    ouble height"
 30 PRINT"      and double width char
    acters"
 40 PRINT''"Based on Phil Hardcastle's
     programme"
 50 PRINT"      of Acorn User Novembe
    r 1985"
 60 PRINT''"Modified by David Fung for
     direct"
 70 PRINT"    input from the Keyboard
    "

 80 KEY=GET
 90 REPEAT
100  PRINT'''"Please select Mode (0-6
    )"
110  M%=VAL(GET$)
120  UNTIL M%>-1 AND M%<7
130 MODE M%
140 DIM dhdw 100
150 store=&900
160 chrdef=&A00
170 tmpstore=&70
180 bitcount=&71
190 twobytecount=&72
200 :
210 FORpass%=0 TO 2 STEP 2
220  P%=dhdw
230  :
240  [OPT pass%
250             LDX #1
260             LDY #1
270 .locloop
280             LDA #0
290             STA twobytecount
300             LDA chrdef,Y
310             STA tmpstore
320 .bloop
330             INC twobytecount
340             LDA #0
350             STA bitcount
360 .lloop
370             LDA tmpstore
380             ROL A
390             LDA store,X
400             ROL A
410             STA store,X
420             LDA tmpstore
430             ROL A
440             STA tmpstore
450             LDA store,X
460             ROL A
470             STA store,X
480             INC bitcount
490             LDA bitcount
500             CMP #4
510             BNE lloop
520             INX
530             LDA twobytecount
540             CMP #2
550             BNE bloop
560             INY
570             CPY #9
580             BNE locloop
590             RTS
600             ]
610  NEXT pass%
620 :
630 *FX4,1
640 REM to enable cursor keys to gene
    rate ASCII codes 136-139 for doub
    le stepping
650 :
660 REPEAT
670  A$=GET$
680  IF A$=CHR$(13) VDU13:VDU10:VDU10
    :GOTO740
690  IF A$=CHR$(136) VDU8:VDU8:GOTO74
    0
700  IF A$=CHR$(137) VDU9:VDU9:GOTO74
    0
710  IF A$=CHR$(138) VDU10:VDU10:GOTO
    740
720  IF A$=CHR$(139) VDU11:VDU11:GOTO
    740
730  VDU11:PROCdouble(A$)
740  UNTIL A$=CHR$(13)
750 *FX4,0
760 REM to restor normal cursor funct
    ion
770 END
780 :
790 DEF PROCdouble(A$)
800 osword=&FFF1
```

```
810 X%=0:Y%=10:A%=10:DD=&A00:D=&900
820 C$=CHR$(240)+CHR$(241)+CHR$8+CHR$
    8
830 C$=C$+CHR$10+CHR$(242)+CHR$(243)
840 ?DD=ASC(A$)
850 CALL osword
860 CALL dhdw
870 VDU 23,240,D?1,D?1,D?3,D?3,D?5,D?
    5,D?7,D?7
880 VDU 23,241,D?2,D?2,D?4,D?4,D?6,D?
    6,D?8,D?8
890 VDU 23,242,D?9,D?9,D?11,D?11,D?13
    ,D?13,D?15,D?15
900 VDU 23,243,D?10,D?10,D?12,D?12,D?
    14,D?14,D?16,D?16
910 PRINT C$;
920 IF POS=0 VDU10
930 REM gives double line-spacing to
    avoid overlap
940 ENDPROC
```



```
 10 MODE 6
 20 PRINT'''''"A Programme to produce
     double height"
 30 PRINT"characters in mode 0 to 6"
 40 PRINT'"Based on Martin Phillips'l
    isting"
 50 PRINT"of Acorn User November 1985
    "

 60 KEY=GET
 70 REPEAT
 80  PRINT''''"PLEASE SELECT MODE (0-
     6)"
 90  M%=VAL(GET$)
100  UNTIL M%>0 AND M%<7
110 MODE M%
120 *FX4,1
130 :
140 REPEAT
150  A$=GET$
160  IF A$=CHR$(13) VDU13:VDU10:VDU10
     :GOTO220
170  IF A$=CHR$(136) VDU8:GOTO220
180  IF A$=CHR$(137) VDU9:GOTO220
190  IF A$=CHR$(138) VDU10:VDU10:GOTO
     220
200  IF A$=CHR$(139) VDU11:VDU11:GOTO
     220
210  VDU11:PROCdouble(A$)
220  UNTIL A$=CHR$(13)
230 *FX4,0
240 END
250 :
260 DEF PROCdouble(A$)
270 X%=0:Y%=9:A%=10:D=&900
280 C$=CHR$(240)+CHR$8+CHR$10+CHR$(24
    1)
290 ?D=ASC(A$):CALL&FFF1
300 VDU 23,240,D?1,D?1,D?2,D?2,D?3,D?
    3,D?4,D?4
310 VDU 23,241,D?5,D?5,D?6,D?6,D?7,D?
    7,D?8,D?8
320 PRINT C$;
330 IF POS=0 VDU10
340 ENDPROC
```

POWER PRESENTATION

Peter Till, Hawera

Those of you who went to the mystery creek agricultural field day will have seen an Electron on the Electrical supply authorities stand. It was programmed as a "come on" to enable a consumer advisor to attract people's attention to his handy hints for new ways to use and save electricity. It was quite reasonably successful and gave the advisor a busy couple of days. There was a graphic display designed to catch the eye followed by a set of 15 pages of handy hints on usage divided into domestic farming and commercial. The Electron was loaned by the King Country and Egmont power boards, programmed in Hawera by yours truly and the consumer advisor. It stood up well to the rigors of 3 days of continuous disc driving and small boy fiddling- a feat not equalled by some previous display equipment we have used.

You may find the title page interesting.

Proc initialise feeds in a special set of characters to read in the ELECTRICITY logo as seen on TV1

Line 25 turns off the cassette which was playing the jingle

Line 30 is for my editing

Line 40 sets the mode with most colours

Line 50 gives a window for the logo

Line 60 sets the colour pointer to a random start

Line 80 advances the colour pointer

Line 90 sets the graphic colours

Line 100 washes the screen with background colour

Line 110 sets text colour

Line 120 sets text background colour

Line 130 Proc print-electricity prints the logo in the window

Line 140 sets the Pseudo Variable TIME to 0 for timing display flashing

Line 160 gives 2 random nos which are then used to plot triangles in logical inverse colours in line 170

Line 175 and 176 give random beeps to increase the weird effect

Lines 180 and 190 either let you out of the loops if you press a key or send the program back to the start of the loops for a new set of colours

Lines 215 to 330 send the program on its way for further information this program is available if required but is rather disc dependent

To another subject- Recently I was loaned a copy of VU-TYPE for

the BBC
which seems to work on the ELECTRON

I have for sale an EPROM of View for the BBC. Any offer considered.

This letter comes to you via View from the ELECTRON.

P.J. Till
11 Collins St
HAWERA

```
 10 PROCinitialise
 20 REM Lines 0 to 200 set up the title page with flashing lights
 30 REM 12/5/86 Electricity quizz P Till
 40 *MOTOR0
 50 *KEY1"MODE6 ¦M LIST ¦M"
 60 MODE2
 70 VDU28,1,10,19,1
 80 I%=RND(14)
 90 REPEAT
100   I%=I%+1
110   GCOL I%,131
120   CLG
130   COLOUR I%
140   COLOUR 129+I%
150   PROCprint_electricity
160   TIME=0
170   REPEAT
180     K%=RND(700):L%=RND(700)
190     PLOT86,K%,L%
200     SOUND 1,-15,K%,5
210     SOUND 1,-15,L%,5
220     UNTIL TIME>100 OR INKEY(100)<>-1
230   UNTIL I%=15 OR INKEY(100)<>-1
240 IF I%=15 THEN GOTO 80
250 REM End of that bit****************************************************
260 *MOTOR1
270 MODE6
280 PRINT''"    WELCOME TO YOUR ENERGY ANALYSIS"
290 PRINT'"           TELL ME ABOUT YOURSELF"
300 PRINT'"   WHAT SORT OF ACCOUNT DO YOU WANT              INFORMATION ABOUT
    ?"
310 PRINT''"   1 Your Farm account"
320 PRINT''"   2 Your Domestic account"
330 PRINT''"   3 Your Horticultural account"
340 TIME=0
350 REPEAT
360   UNTIL TIME=500
```

```
370 PRINT'''"   ENTER THE OPTION NUMBER YOU WANT"
380 VDU 7
390 INPUT option$
400 IF VAL(option$)<1 OR VAL(option$)>4 THEN GOTO 280
410 IF VAL(option$)=1 THEN CHAIN "PIC4"
420 IF VAL(option$)=2 THEN CHAIN "DOM"
430 IF VAL(option$)=3 THEN CHAIN "HORTI"
440 DEFPROCinitialise
450 REM
460 REM
470 REM
480 VDU23,224,0,254,254,254,240,240,240,254
490 VDU23,225,254,254,240,240,240,254,254,254
500 VDU23,226,0,240,240,240,240,240,240,240
510 VDU23,227,240,240,240,240,254,254,254,254
520 VDU23,228,0,31,63,127,124,248,240,240
530 VDU23,229,240,240,240,248,124,127,63,31
540 VDU23,230,0,127,127,127,28,28,28,28
550 VDU23,231,28,28,28,28,28,28,28,28
560 VDU23,232,0,127,127,127,120,120,120,127
570 VDU23,233,127,127,127,125,125,124,124,124
580 VDU23,234,0,134,198,230,230,102,230,230
590 VDU23,235,198,134,134,198,198,230,230,246
600 VDU23,236,0,28,28,28,28,28,28,28
610 VDU23,237,28,28,28,28,28,28,28,28
620 VDU23,238,0,241,123,59,63,63,31,31
630 VDU23,239,31,14,14,14,14,14,14,14
640 VDU23,240,0,192,192,128,128,128,0,0
650 VDU23,241,255,255,127,127,63,31,15,3
660 VDU23,242,3,15,31,63,127,127,255,255
670 VDU23,243,192,240,248,252,254,254,255,255
680 VDU23,244,255,255,254,254,252,248,240,192
690 REM
700 ENDPROC
710 DEFPROCprint_electricity
720 PRINTTAB(9,0)"    "
730 PRINTTAB(9,1)" ";CHR$(242);CHR$(243);" "
740 PRINTTAB(3,2)"       ";CHR$(241);CHR$(244);"    "
750 PRINTTAB(3,3)" ";CHR$(224);CHR$(226);CHR$(224);CHR$(228);CHR$(230);CHR$(23
    2);CHR$(234);CHR$(228);CHR$(236);CHR$(230);CHR$(238);CHR$(240)
760 PRINTTAB(3,4)" ";CHR$(225);CHR$(227);CHR$(225);CHR$(229);CHR$(231);CHR$(23
    3);CHR$(235);CHR$(229);CHR$(237);CHR$(231);CHR$(239);" "
770 PRINTTAB(1,5)"                 "
780 PRINTTAB(1,7)"                 "
790 PRINTTAB(1,6)"THE POWER TO HELP"
800 PRINTTAB(7,7)" YOU!"
810 PRINTTAB(1,8)"                 "
820 ENDPROC
```

COURSES FOR HORSES

(AND TURTLES)

Ever learnt Logo on an Apple? One of the "standard" games you try early on is to manoeuvre a horse round a series of fences. Here is a BBC Logo version, taking advantage (of course) of its colour facilities. Of course, if you've some Apple-using friends and a colour screen, show this off to them. Sound can be added another day.

There are 5 procedures:

COURSE is the "put it all together" procedure which defines all the colours and initiates setting up the screen.

BOX draws the boxes used for the fence posts

BARS makes up a fence

SETUP positions 7 bars around the screen, in pre-set positions.

JUMP is a word for the player to use. It changes colour, angles the turtle-horse to appear to jump over the bars, and returns the turtle to its normal colour.

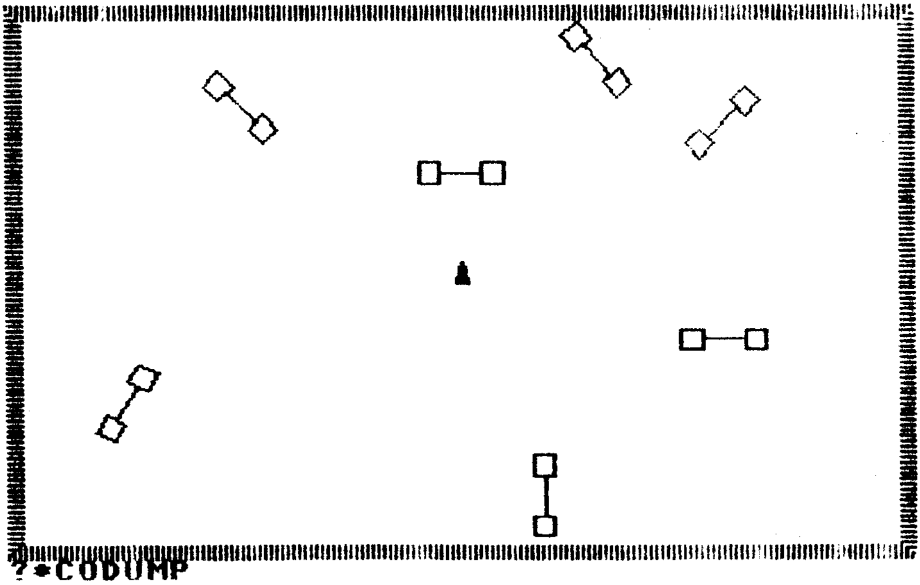
```
TO JUMP
SETPC 1
LT 45 FD 20 RT 45
FD 30
RT 45 FD 20 LT 45
SETPC 3
END
```

```
TO COURSE
SETMODE 1
PAL 1 5
SETPC 2
SETUP
SETPC 3
PD
END
```

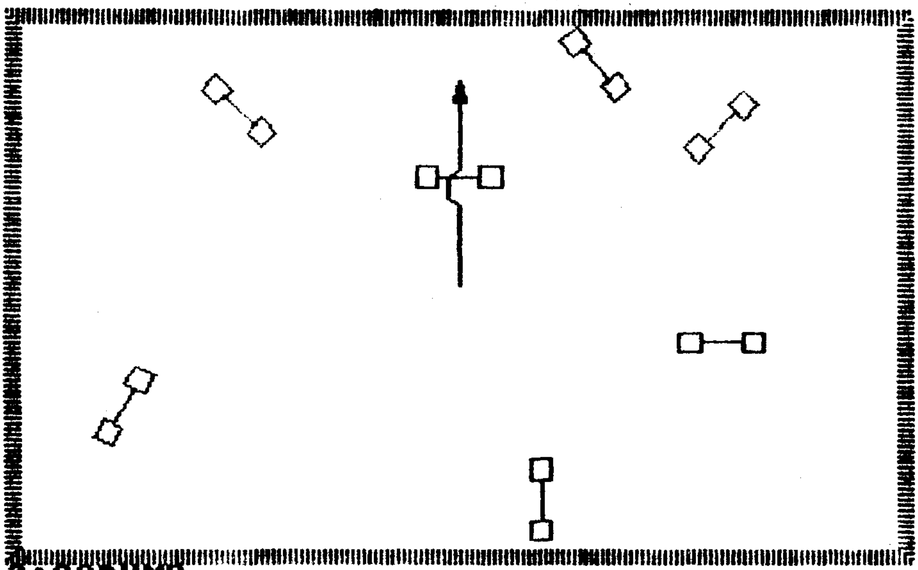
```
TO BOX
REPEAT 4 [FD 30 RT 90]
END
```

```
TO BARS
BOX
FD 15 LT 90
FD 60
PU FD 30 RT 90 BK 15
PD BOX
END
```

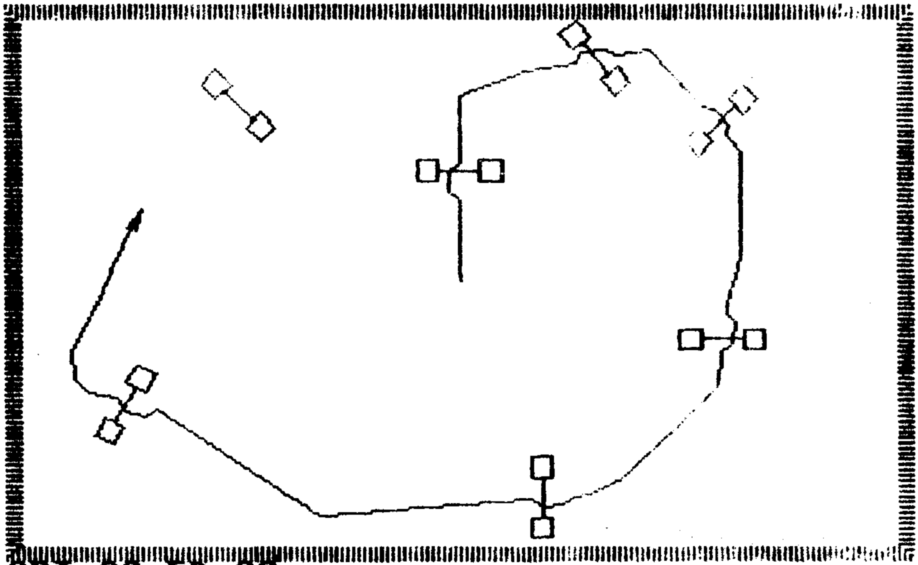
```
TO SETUP
PU
SETPOS [30 150] SETH 0 PD BARS PU
SETPOS [200 300] SETH 50 PD BARS PU
SETPOS [400 250] SETH -45 PD BARS PU
SETPOS [400 -100] SETH 0 PD BARS PU
SETPOS [100 -350] SETH 90 PD BARS PU
SETPOS [-500 -200] SETH 120 PD BARS PU
SETPOS [-300 230] SETH 45 PD BARS PU
HOME
END
```



```
?*CODUMP
```



```
?*CODUMP
?FD 120
?JUMP
?FD 100
?*CODUMP
```



```
?RT 30 FD 30
?RT 40 FD 40
?RT 30 FD 100
?FD 100
?*CODUMP
```

MASTER IMPROVEMENTS

Here are the niggles about the BBC that Neil considers improved upon with the Master:

(1) The screen image can be stored in 'shadow' memory so that user memory is not taken up.

(2) Disk buffers, character definitions, and all the sideways ROM work pages are now stored in a separate area of memory so that PAGE can always be &E00 (just like it used to be with cassette tape).

(3) With the Advanced Disk Filing System (ADFS) the old limitation of 31 files per side of a disk is gone. Furthermore, the ADFS treats the floppy disk as a single storage area - you need no longer worry about which side of the disk that file is stored on. (Just which directory it is in!) With the double density controller, each disk stores 640K.

(4) An additional 64K of memory can be used to run sideways ROM software, for data storage, or for program and data storage for a special version of the BBC BASIC (BAS128).

(5) A battery-backed realtime clock is included, so the computer never forgets the right time. The battery is also used to back up 50 bytes of CMOS RAM which contain various configuration parameters varying from what the default filing system is when the computer is turned on to the auto repeat rate of the keys.

(6) A numeric keypad is included.

(7) Bundled software includes a full-screen editor which can be used to edit BASIC programs, but which also has many wordprocessing features for formatting printout produced from it. In many ways it resembles WORDWISE, but it can be used in 80 column mode.

(8) Also bundled are VIEW, VIEWSHEET, additional graphics commands of the sort available from Acornsoft'S GXR ROM, and a terminal emulator.

(9) Two cartridge slots that will take Electron cartridges, as well as EPROMs plugged into cartridges that will be available from ACORN 'real soon now'.

(10) Internal co-processor options.

ELECTRON COLUMN

Steve Cosgrove

Our baby is starting to laugh out loud. We have got a kitten who likes to sit in my box of printer paper, and 'attack' it as it goes up. The weather has forced me to move the computer from our spare room to the lounge, where it is warmer. Yes! life is normal.

It is harder to determine when a computer is 'normal'. Watching TV, one may wonder whether an EXCELL computer is normal. It apparently does everything an IBM computer can do, at half the cost. Hundreds of other makes of computer make similar claims. What the differences are depends on whether you are an IBM supporter or not. Supporters claim the the cheaper computers are not as well made, not as well supported after sales, not as well serviced at all, and are more likely to need servicing. Opponents of IBM's dominance (which seems to be waning) say that the difference is entirely in an increased profit margin.

Within the BBC range of computers, there is a sense of normality. Unfortunately, it is not other computers which are trying to 'emulate' the Acorn standards. These standards are, in my opinion, brilliant. I have run the same Acornsoft ISO Pascal ROM on an Electron, BBC Model B, and now a Master. It works fine. I doubt that any other small computer maker can claim that sort of compatablity within its range.

Page 229 of the Electron User Guide lists a series of 'entry points' for routines which write characters to the screen, read from the keyboard, perform an '*' command, or one of many filing system commands. There are other things too. It is because, regardless of all the new things which each new model does, these basic functions are still done by 'jumping into' the same addresses. The main benefit of all this is that programing in 'assembly language' is much easier.

Assembly Language is very different to BASIC programing. Every little step must be made explicitly. The program in last month's column was small and rather impractical. It presents some very fundamental concepts though. Even if you are not over-confident, look for a book on the subject at your local dealer, or even a public library. Any books about '6502 Assembly Programing' (or Programming, if it is British) will have some relevance to the Electron. If you do try this, please write to tell me about how you get on.

In reply:
H L Cheeseman:
Thank you for your letter. The manual supplied with my EFS was clearly written for a BBC model B. I suspect yours is the same. These manuals do not cover the extra features of the EFS. The situation is not very good. The fact that you can read the menu, and do not get any 'Disk Error', messages suggests that the disk is being read OK. Have you tried "CHAIN"ing files off the disk, without using the menu? Sometimes a program will work if everything is reset on the computer before trying to LOAD it. To do this - unplug the Electron, wait at least 5 seconds, then plug it in again. Also, sometimes a disk produced on one drive will simply not load off another because one of the drives is not aligned properly. Try taking your Electron to your colleague's house, and plugging her or his drive into your EFS. The disk might read OK then. If you wish, send the disk to me, C/- the User Group. I can try running it on my Electron, and on the Master which I am currently using, and see if that helps. Please enclose 50c in stamps for return postage. (30c if it is a 3.5 inch disk - you didn't say in your letter.) When first turned on, the Electron is set up just like a BBC Model B. It runs DFS, with PAGE = &1900, which is the same as the BBC. There are many other things which can cause problems. Despite this, I have had a minimum of compatablity problems. The major one is that when running programs under ADFS, I have found that many do not run properly. They tend to 'crash' the first time any attempt is made to read the keyboard. If you are trying to run a BASIC program, try this sequence:

```
>LOAD "filename"
><ESCAPE>
>RUN
```

sometimes a program works OK after <ESCAPE> has been pressed. There are other problems connected with this bug. I have written to Solidisk, and am waiting for a reply.

Ref:9PS:17186:BBC/AUG (some people have very long names!)
Many people had told me about your letter of 17/1/86. I received it yesterday (1 July)! Hopefully the Electron Column of March 1984 solved your problem. If it didn't write to me again, and I will look at the Drawing program myself. If it did, then write to the magazine setting out how other Electron owners can fix the problem you found. Most of all, thank you for your letter too.

P J Till:
Your letter of about 27 March was like the one above. I had

heard about it, and formulated a reply to it, but never actually saw it until yesterday. *fx255 might be able to quieten your 'concrete mixer' disk drive. This will be the object of a longer article, but in a nutshell, try:

```
*fx255,0
<BREAK>
           or
*fx255,255
<BREAK>
```

then some normal disk drive operations. It will affect various other things the computer does, but this side effects can be eliminated. More on that later.

*fx6 is hardly described at all in the Plus 1 User Guide! It allows the user to designate one character which will not be sent to the printer. This could be anything (eg, try *fx6,32 then a listing). The default, when the computer is switched on, or reset, is *fx6,10. CHR$(10) causes the printer to do a line feed, hence, lines printed on top of each other. There will be a way to force your printer to do a line feed each time it returns to the start of a line (called 'auto line-feed on CR'). But you seem to have overcome the problems. It is really great to get feedback on what I have written. Thank you P J Till. (PS Is your name Peter?)

Other odd bits and pieces from far and near:-

"Try '*fx142' '*fx242'"

"The standard for Electron Games has risen sharply with 'Repton I' & 'Repton II' & 'Beach-Head'....The graphics and sound of Beach-Head are of an excellent quality!"

"A new version of the Electron is comming out soon that has many of the features of the Master."

On a tee-shirt "Electron owners do it slowly".

Everyone to whom I owed a letter should have received one by now. There is one letter (and cassette) which became separated from its owners address. It appears to have been sent to the group last year. (It came to me in January.) So if you sent us a copy of "Type Writer" from "Langney Software", PLEASE let us Know, and we will send your cassette back!

If you wrote regarding the RAM/ROM board, and have not received a reply, please write again.

I am also aware that the topics of this column have recently not been specific to the Electron. I would be very Keen to hear from a few more readers, to see what you would like to read in this, your column.

* * *

MASTER SPEED COMPARISON

One of the first things people tend to do when they see a new computer is to compare it to their old one. (Men do - ed). Here are some comparisons based on common mathematical operations. Times are in milliseconds.

operation	Beeb only	Beeb + 6502	Master BasicIV	Master BAS128
I%*I%	5.52	3.68	5.64	5.89
I%^2	6.36	4.3	4.11	6.67
SQR(I%)	16.84	11.24	9.59	17.3
RAD(I%)	8.62	5.72	7.73	8.93
SIN(RAD(I%))	37.6	25.1	24.9	38.5
LOG(I%)	24.3	16.3	15.7	24.9

BENCHMARK PROGRAM:

a) Subtracts the overhead time involved in the basic loop before calculating the time per operation in milliseconds

b) The various mathematical operations can be specified as data statements.

c) The number of loops can be varied by changing H% (note 1E4 is same as 10,000)

```
   10 REM BENCH
   20 DIM A% 255
   30 H% = 1E4
   40 $A% = "3"
   50 TIME = 0
   60 FORI%=1TOH%:D%=EVAL($A%):NEXT
   70 T1% = TIME
   80 READ $A%
   90 REPEAT
  100   TIME = 0
  110   FORI%=1TOH%:D%=EVAL($A%):NEXT
  120   T2% = TIME
  130    PRINT (((T2% - T1%) * 10^4) DIV H%) / 1E3;
TAB(14); "milliseconds for "; $A%
  140   READ $A%
  150   UNTIL $A% = "=END"
  160 END
  170
  180  DATA  I%,  I%*I%,  I%^2,  SQR(I%),  RAD(I%),
SIN(RAD(I%)), LN(I%), LOG(I%)
  190 DATA =END
```

USER GROUP MEETINGS

AUCKLAND: -meets 2nd Wednesday of the month, 7.30pm, Conference Rooms, Auckland Secondary Teachers College,60 Epsom Ave, Epsom. ph Dave 770-630 x 518(bus) or Kerry ???-???.
-North Shore: meets last Wednesday of the month, 7.30pm, Salvation Army Hall, Glenfield Road, Glenfield ph Chris 419-0543 (wk)

CHRISTCHURCH: -fortnightly workshops. Monday 6.30pm at Hagley High School. ph. the Nolans on 883-787

DUNEDIN: -first Thursday of the month. Phone Martin McDowall 42-031

HAWKES BAY: -Alternative months Hastings & Napier. Contact Kendall Napier 435-624, Bob Taradale 446-955, Mitch Hastings 778-235.

INVERCARGILL: -Phone Evan 330-444 Invercargill.

PALMERSTON NORTH: -Phone Tom Skinner 83-009(wk)

TAUPO: -meets every second Wednesday @ 7pm. Contact David 84-215 (h), 85-124 (wk).

TAURANGA: -every second Wednesday. ph. Chris & Jane 65-076.

TIMARU: -Phone Lloyd van der Krogt Timaru 61-412.

TOKOROA: -meets first Friday of each month, Tokoroa High School, 8pm. Phone Brian 67-625 Tokoroa.

WAIKATO: -first Monday of the month 7.30pm Waikato Tech Institute. Ph. Alison or John, Morrinsville 6695.

WELLINGTON: -meets usually second WEDNESDAY of the month, 7.30pm, Royal Society Lecture Theatre, Turnbull St, Thorndon. Other dates advised in Beeblet regional news.(May p.39)
-Workshops: fourth Wednesday of month, other venues. ph. Don 848-235 or Mike 785-437.

OTHER CENTRES: - let us know and we will publish details here.

THE NEWSLETTER:

CONTRIBUTIONS:-most welcome. Listings should be sent in on tape or disc. (Tape - 2 copies, one at 300 baud please). Please include written explanation of listing; text and graphics only material welcome too.

DEADLINES:- For a particular issue, the last day for material is the last day of the month prior to publication.

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Membership of the users group is on payment of an annual subscription from April to March. For the 1986/7 year it is: $30.00, plus $5.00 for Wellington members as a local branch levy, which entitles attendance at meetings as detailed above. Joining or renewing members get all the back issues of the current year - those joining from 1 October may have half the annual sub waived and only receive newsletters from 1 October.

THE BBC/ACORN COMPUTER USER GROUP OF NZ INC, P.O.Box 9592, WELLINGTON.

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